

## PATENT COOPERATION TREATY

PCT



10/15/2003

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference  KRH-689	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No.  PCT/JP2003/013657	International filing date ( <i>day/month/year</i> )  24 October 2003 (24.10.2003)	Priority date ( <i>day/month/year</i> )  25 October 2002 (25.10.2002)	
International Patent Classification (IPC) or national classification and IPC  C12N 1/14			
Applicant  KUREHA CHEMICAL INDUSTRY CO., LTD.			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a.  (*sent to the applicant and to the International Bureau*) a total of \_\_\_\_\_ sheets, as follows:

sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b.  (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand  06 February 2004 (06.02.2004)	Date of completion of this report  03 June 2004 (03.06.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/013657

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:

- international search (under Rules 12.3 and 23.1(b))
- publication of the international application (under Rule 12.4)
- international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

The international application as originally filed/furnished

the description:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PJP 03/13657

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

## 2. Citations and explanations

Document 1: JP 55-118389 A (Takeda Chemical Ind., Ltd.), 11 September 1980, entire text, (Family: none)

Document 2: JP 11-318433 A (Toshimitsu HATTORI), 24 November 1999, entire text, (Family: none)

The invention set forth in claims 1-10 does not involve an inventive step in the light of document 1 cited in the international search report.

Document 1 discloses a method for cultivating matsutake mushrooms, which comprises a step for the static cultivation of matsutake mushroom mycelium, a step for the shaken cultivation of the matsutake mushroom mycelium over a period of approximately 40 days and a step for the agitated cultivation of the matsutake mushroom mycelium over a period of approximately 25 days.

In addition, document 1 indicates that the cultivation medium which is used during agitated cultivation comprises 1.0% of glucose, 1.0% of malt extract, 0.5% of yeast extract and 0.1% of phosphoric acid.

The osmotic pressure of the abovementioned cultivation medium is considered to be between 0.01-0.8 MPa; consequently, a comparison of the invention set forth

in claims 1-10 and the invention disclosed in document 1 shows that they differ in that:

- 1) with regards to the aeration rate in a liquid cultivation medium, the inventions set forth in claims 1-10 exhibit a low aeration rate of less than 0.05 vvm, whereas the invention disclosed in document 1 exhibits an aeration rate of 0.1-1.5 vvm (refer to document 2, paragraph [0008] and the like); and
- 2) the invention set forth in claims 1-10 employs static cultivation in a liquid, whereas the invention disclosed in document 1 employs cultivation using a slanted culture.

However, it is within the conventional creative abilities of a person skilled in the art to set optimal values for cultivation conditions such as the aeration rate, and to substitute static cultivation in a liquid for cultivation using a slanted culture when conducting static cultivation; therefore, a person skilled in the art could configure in such a manner, as appropriate.

In addition, when inoculating with mycelium a person skilled in the art could set optimal values for the expansion rate upon inoculation or the initial microorganism concentration, as appropriate.